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None

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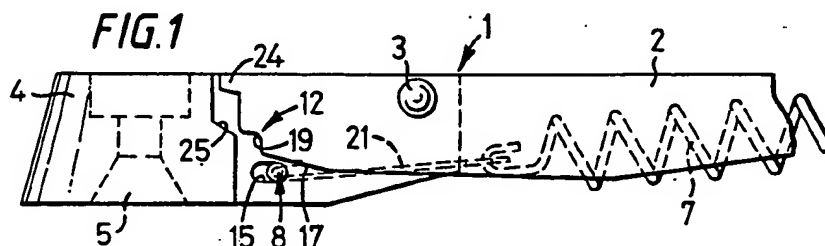
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Selected US specifications from IPC sub-class

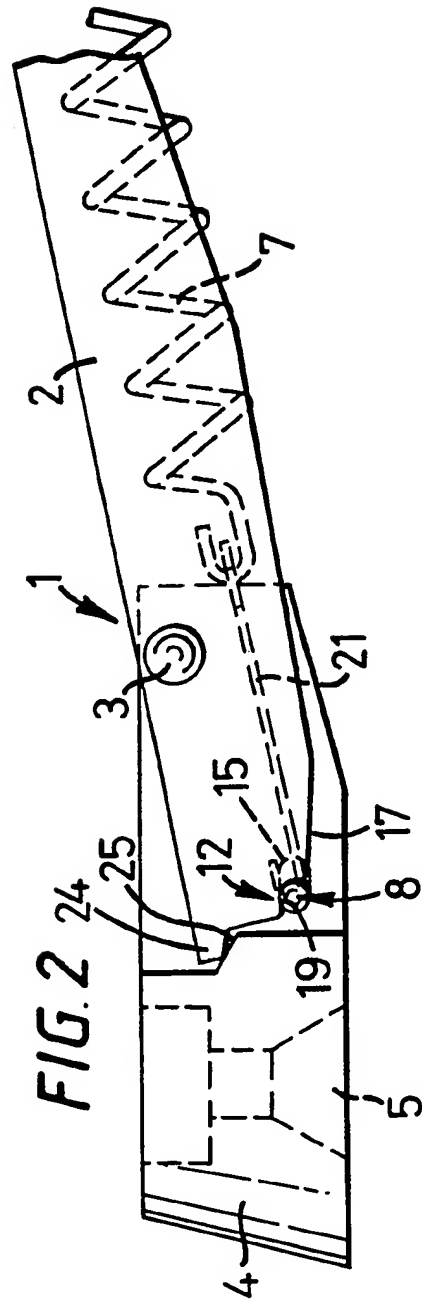
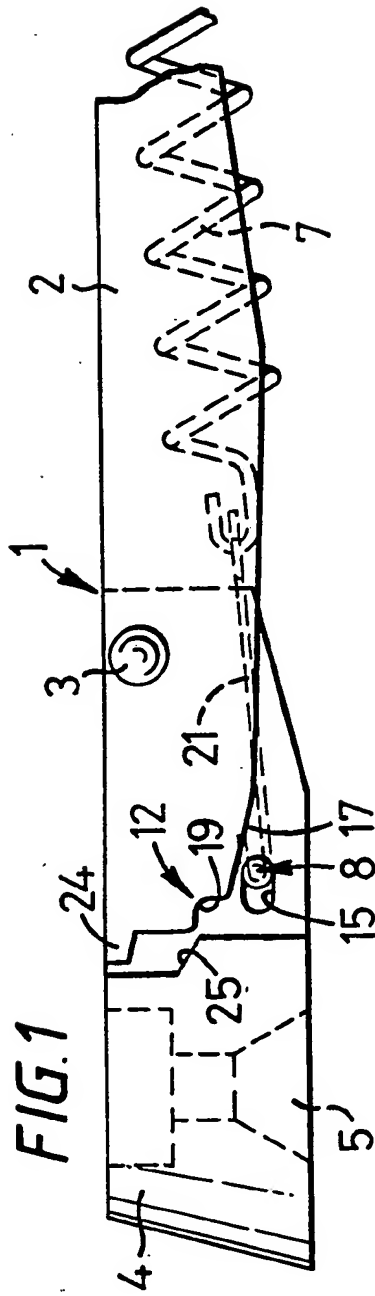
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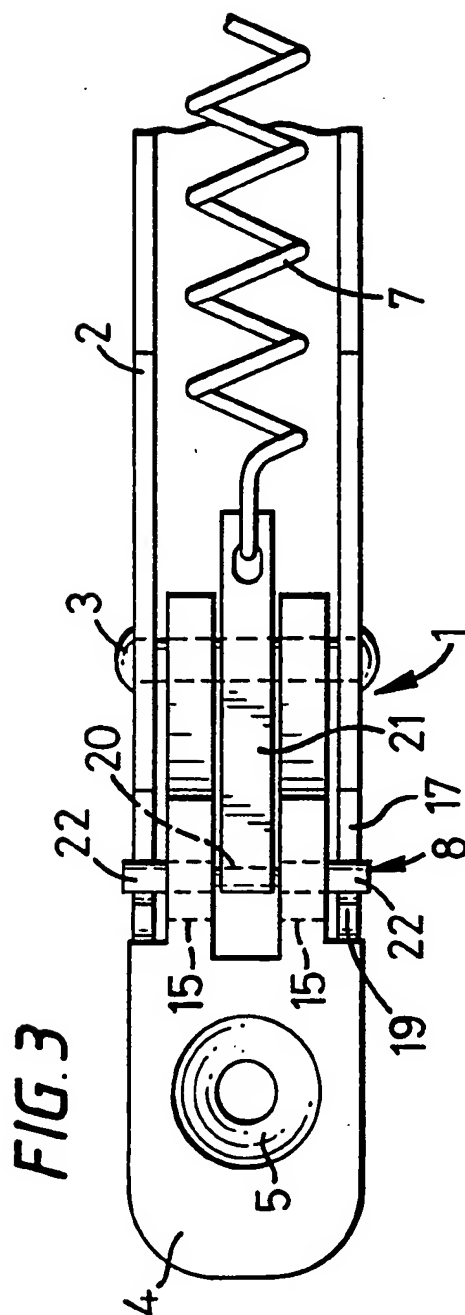
(54) Lockback device for windscreen wiper arm

(57) A lockback device for a windscreen wiper arm comprising an arm member (not shown), retainer (2) carrying the arm member, head (4) for attachment to a drive spindle (not shown) and pivoted to the retainer and spring (7) acting between head and retainer in a direction to urge the arm member, in use, towards a windscreen comprises a cam and shoulder arrangement (17, 19) on the retainer and a moveable spring anchor pin (8) in the head, the pin protruding outwardly of the head into the path of the cam and shoulder arrangement, the arrangement being such that, on pivoting of the retainer in a direction away from the windscreen, the cam and shoulder arrangement will engage the pin and move it backwards along slots (15) until the pin is seated in the shoulder recess. The result is that the action of the spring on the head is eliminated whereby the arm member is no longer biased towards the windscreen.



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This invention relates to a lock back device for a windscreen wiper arm.

In modern cars, there is an increasing tendency for the spindles of the windscreen wiper mechanisms to be positioned in a slot in the bodywork of the vehicle and to be so arranged that, when the windscreen wiper is in its parked position, the entire or part windscreen wiper is situated inside the slot and is no longer visible. This type of device provides problems in that it is not possible for the arm to be locked back away from the windscreen as is usually possible on fully visible arms by virtue of the over centre action of the arm spring. Nevertheless it is desirable for the arm to be retained in a position in which the windscreen wiper blade is clear of the windscreen both to enable the entire windscreen to be cleaned and also both for changing the windscreen wiper blade and for initial assembly on the vehicle. A number of possibilities have been provided for obtaining this lockback of the arm but these have either been of complicated construction or involve the use of loose parts which can therefore be readily lost.

The present invention seeks to provide a lockback device for the arm of a windscreen wiper which is of relatively simple construction, is simple to use and has no loose parts which could be lost.

30 According to the invention, there is provided a lockback device for an arm of a windscreen wiper comprising an arm member, a retainer carrying the arm member, a head for attachment to a drive spindle and pivoted to the
35 retainer and a spring acting between the head and the retainer in a direction to urge the arm towards a

windscreen with which the windscreen wiper is intended to be used, the lockback device comprising a cam and shoulder arrangement on the retainer and a moveable spring anchor pin in the arm head, the spring anchor pin protruding outwardly of the head into the path of the cam and shoulder arrangement on the retainer, the arrangement being such that, on pivoting of the retainer in a direction away from the windscreen by an amount greater than the normal operative angle, the cam and shoulder arrangement will engage behind the spring anchor pin so as to move the spring anchor pin out of operative engagement with the arm head and retain it against the shoulder on the retainer, thus preventing it from acting between the arm head and retainer to urge the retainer towards the windscreen.

Preferably the anchor pin is located at opposite ends in slots in the head, the slots in the head extending substantially longitudinally of the windscreen wiper arm as a whole. The spring anchor pin may be of generally dumbbell shape having a narrower portion in the middle onto which the spring is hooked so that the spring will retain the anchor pin in position and no further retention will be necessary.

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The invention will now be described in greater detail, by way of example, with reference to the drawings, in which: -

30 Figure 1 is a side view of part of a windscreen wiper arm showing the lockback device of the present invention with the arm in the normal operative position;

Figure 2 is a view similar to figure 1 but showing the lockback device in the locked position, and

Figure 3 is a plan view from underneath of the part of the wiper arm as shown in figure 1.

The windscreen wiper arm 1 comprises an arm member (not shown) carried by a retainer 2 which in turn is pivoted at 3 to an arm head 4 having a bore arrangement 5 for attachment to the windscreen wiper spindle. The windscreen wiper arm is urged towards the windscreen by means of a spring attached at one end to an anchoring arrangement (not shown), which may be the end of the arm member, and at the other end to an anchor pin 8 arranged on the arm head 4 and transversely thereof. As can be seen from figure 1, because the line of action of the spring 7 is off-set from the pivot 3, the retainer 2 (and arm member) will be pivoted in a clockwise direction relative to the arm head 4 and so cause a windscreen wiper blade attached to the end of the arm to be pressed against the windscreen.

As so far described, the arrangement is of the usual form. However, in the present case, the retainer is provided with a cam and shoulder arrangement 12 which is intended to co-operate with the spring anchor pin 8 and the spring anchor pin 8 is itself located at its ends in slots 15 in the arm head.

As will be seen from figure 1, the cam and shoulder arrangement is in the form of a cam surface 17 which leads to a part annular recess 19 which is dimensioned to co-operate with the diameter of the spring anchor pin 8. The spring anchor pin 8 is suitably in the form of a dumbbell type construction, the reduced centre portion 20 being used to position an anchor plate 21 on the end of the spring 7, which plate 21 is then located between the two enlarged portions 22 of the anchor pin 8 and will retain the pin 8 in the head 4 without the need for

The operation of the above described lockback device will now be described:-

Starting from the position shown in figure 1, it will be observed that, from this position, the retainer 2 (and arm member) can pivot clockwise relative to the arm head 4 without any restriction. However, if the retainer 2 is moved anticlockwise to raise the windscreen wiper blade from the windscreen, the cam and shoulder arrangement 12 will engage the spring anchor pin 8 and, by virtue of its cam surface 17, will move the spring anchor pin 8 backwards along the slots 15 until the pin is seated in the recess 19. This position is shown in figure 2.

In the lockback position, it will be observed that the spring 7 at its head end no longer acts on the arm head 4 but will act entirely on the retainer 2 therefore having no pivoting effect on the retainer 2 about the arm head 4 which would otherwise be brought about by virtue of the action of the spring 7 on the spring anchor pin 8. The spring anchor pin 8 will be retained firmly in the recess 19 in the retainer 2 so as to hold the retainer 2, and thus the windscreen wiper arm proper, in the locked back position. It will also be seen that the retainer 2 is provided with a projection 24 which is engageable with a shoulder 25 on the arm head 4, thus preventing the retainer 2 from being pivoted anticlockwise to an extent which would cause it to overstress any of the components of spring anchor plate 21.

In order to return the arm to its fully operative
35 position, all that is necessary is to push the retainer
2 in the clockwise direction, thus forcing the spring

anchor pin 8 out of the recess 19 and allowing it to spring back along the slots 15 to take up the position shown in figure 1. The retainer 2 (and arm member) are thus released for normal action.

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It will be appreciated that various modifications may be made to the above described embodiment without departing from the scope of the invention. For example, the dumbbell shaped anchor pin may be replaced by a straight 10 anchor pin which, for example, would be retained in its place by friction or other means.

CLAIMS

1. A lockback device for an arm of a windscreen wiper comprising an arm member, a retainer carrying the arm
5 member, a head for attachment to a drive spindle and pivotted to the retainer and a spring acting between the head and the retainer in a direction to urge the arm towards a windscreen with which the windscreen wiper is intended to be used, wherein the lockback device
10 comprises a cam and shoulder arrangement on the retainer and a moveable spring anchor pin in the arm head, the spring anchor pin protruding outwardly of the head into the path of the cam and shoulder arrangement on the retainer, the arrangement being such that, on pivotting
15 of the retainer in a direction away from the windscreen by an amount greater than the normal operative angle, the cam and shoulder arrangement will engage behind the spring anchor pin so as to move the spring anchor pin out of operative engagement with the arm head and retain
20 it against the shoulder on the retainer, thus preventing it from acting between the arm head and retainer to urge the retainer towards the windscreen.

2. A lockback device as claimed in claim 1, wherein the
25 anchor pin is located at opposite ends in slots in the head, the slots in the head extending substantially longitudinally of the windscreen wiper arm as a whole.

3. A lockback device as claimed in claim 2, wherein the
30 spring anchor pin is of generally dumbbell shape having a narrower portion in the middle onto which the spring is hooked so that the spring will retain the anchor pin in position.

4. A lockback device as claimed in claim 1, 2 or 3, wherein the cam and shoulder arrangement comprise a run up cam leading to a part circular recess in which the anchor pin can seat.

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5. A lockback device as claimed in any one of claims 1 to 4, wherein stop means are provided to limit the amount of travel of the retainer outside a normal operative range.

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6. A lockback device substantially as described herein with reference to the drawings.